2. Project Description

This section describes the Tehachapi East Afterbay Project as proposed by the CDWR. The intention of this description is to provide a general overview of the proposed project and to ensure a common understanding of the proposed project for evaluating its environmental effects.

Section 2.1 provides background information on the State Water Project, of which the proposed project would be a part. Section 2.2 describes the objectives and purpose of the proposed project and Section 2.3 details the location of the project and pertinent characteristics of the site. Section 2.4 describes the features of the proposed project, including construction methods and project operations. Section 2.5 explains the intended uses of this EIR and other necessary public agency actions relevant to the proposed project.

2.1 Background

The California State Water Project is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. Its main purpose is to store water and distribute it to urban and agricultural water suppliers in northern California, the San Francisco Bay area, the San Joaquin Valley, the central coast, and southern California. The State Water Project includes 32 storage facilities, reservoirs, and lakes; 17 pumping plants; three pumping-generating plants; five hydroelectric power plants; and approximately 660 miles of canals and pipelines. The main line system, known as the California Aqueduct, begins in the Sacramento-San Joaquin Delta and extends as far south as Lake Perris in Riverside County.

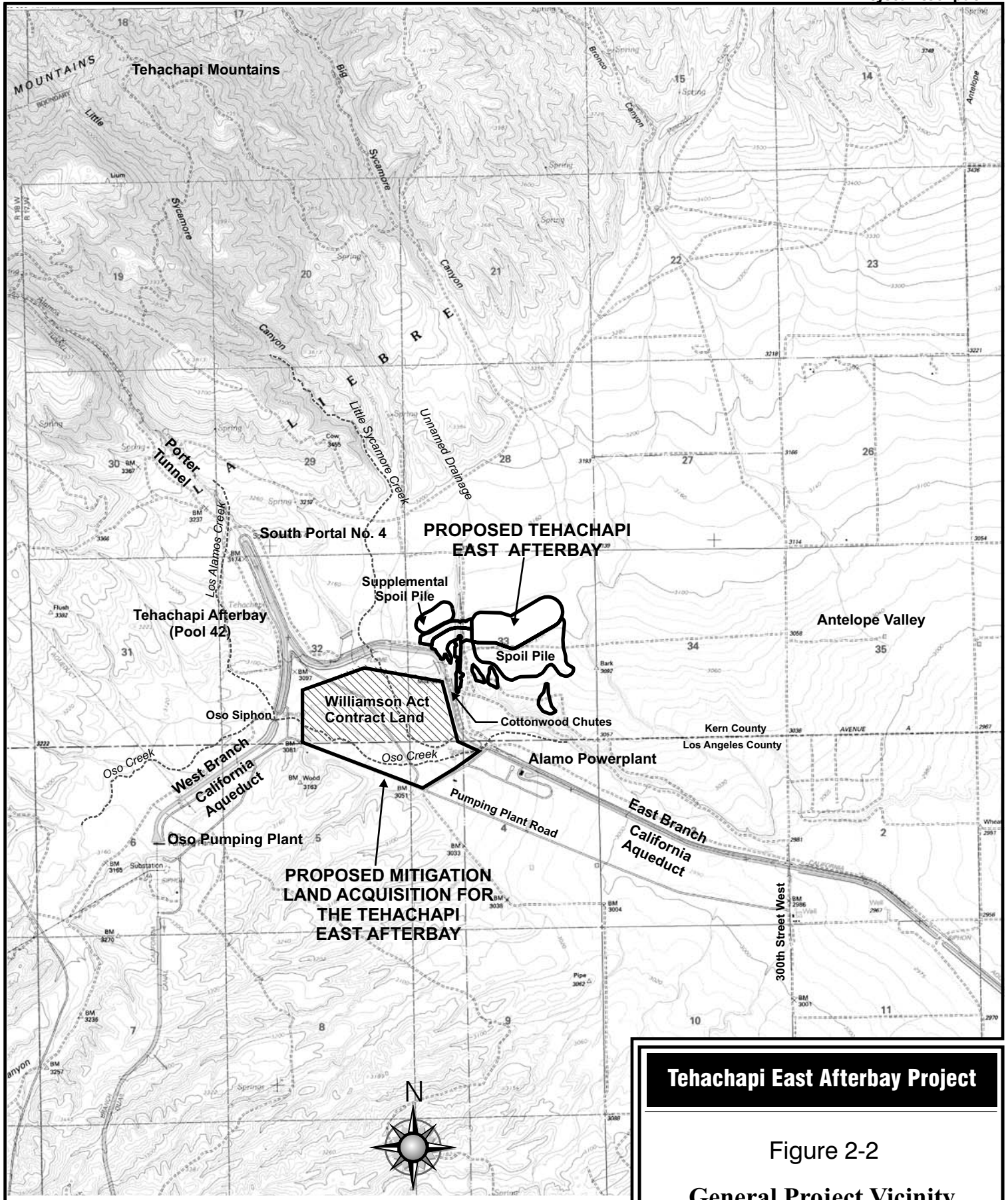
The Dos Amigos, Buena Vista, Teerink, Chrisman, and Edmonston Pumping Plants are referred to as the "Valley String" on the State Water Project (see Figure 2-1). These plants, except for Dos Amigos, operate virtually simultaneously to make water deliveries to the East and West Branches of the California Aqueduct. Since the early 1970s, the CDWR has been investigating both on- and off-aqueduct alternatives to provide additional storage downstream of the Edmonston Pumping Plant, which pumps water over the Tehachapi Mountains. The proposed Tehachapi East Afterbay (East Afterbay or reservoir) would provide this additional storage.

The existing Tehachapi Afterbay (Pool 42) consists of the canal sections immediately downstream of the Porter Tunnel, where the California Aqueduct emerges from the Tehachapi Mountains (see Figure 2-2). Just downstream of the Porter Tunnel, the California Aqueduct bifurcates into the West and East Branches. The West Branch of the Aqueduct delivers water to the Oso Pumping Plant, Quail Lake, William E. Warne Powerplant, Pyramid Lake, Castaic Powerplant, and terminates in Castaic Lake. The East Branch of the Aqueduct delivers water to Cottonwood Chutes, Alamo Powerplant, Pearblossom Pumping Plant, Mojave Siphon Powerplant, Silverwood Lake, Devil Canyon Powerplant, and terminates in Lake Perris. The Oso Pumping Plant is located on the West Branch of the Aqueduct, approximately 1.25 miles southwest of the bifurcation of the California Aqueduct. The Alamo Powerplant is located on the East Branch, approximately 1.5 miles southeast of the bifurcation of the California Aqueduct.

Tehachapi East Afterbay Project

Figure 2-1
California Aqueduct

To Dos Amigos Pumping Plant
To Bakersfield
Buena Vista Pumping Plant
Teerink Pumping Plant
Chrisman Pumping Plant
California Aqueduct
Edmonston Pumping Plant
Tehachapi Mountains
Porter Tunnel
PROPOSED TEHACHAPI EAST AFTERBAY
Tehachapi Afterbay
Kern County
Ventura County
Oso Pumping Plant
Alamo Powerplant
To Lancaster
Quail Lake
West Branch
East Branch
To Lake Perris
Peace Valley Pipeline
William E. Warne Powerplant
Pyramid Lake
Los Angeles County
Ventura County
Angeles Tunnel
Castaic Powerplant (LADWP)
Castaic Lake
To Los Angeles
N
0 4 8 16
Scale in Miles



Tehachapi East Afterbay Project

Figure 2-2

General Project Vicinity

2.2 Project Objectives

The Edmonston Pumping Plant is the largest pumping facility of the State Water Project. It lifts water almost 2,000 feet up and over the Tehachapi Mountains into southern California. At peak capacity, the plant pumps almost two million gallons a minute (4,160 cubic feet per second) through ten miles of pipeline across the Tehachapi Mountains. Substantial demands on energy resources are required to maintain these pumping operations. During periods of peak energy demand, the State Water Project endeavors to reduce pumping to decrease pumping cost and to decrease energy demands on existing power supplies. The ability to shift to off-peak pumping is, however, often limited by a lack of regulatory storage and the need to maintain flow rates in the East Branch of the California Aqueduct. Otherwise, reduced pumping operations would reduce energy production at downstream hydroelectric power plants such as the Alamo Powerplant, William E. Warne Powerplant, and the Castaic Powerplant, and reduce water deliveries to downstream water contractors.

The CDWR proposes to construct a new afterbay facility as an extension of the existing Tehachapi Afterbay. The Tehachapi East Afterbay Project has been proposed with the basic objective of shifting the pumping load of the Valley String Pumping Plants from peak (high demand) periods to off-peak (low demand) periods. The additional storage provided by the East Afterbay would allow downstream facilities on the East Branch and, to a lesser extent, the West Branch of the California Aqueduct to continue operations for short periods without relying on the pumping operations of the Valley String Pumping Plants. The primary project benefits are reduced pumping costs, increased operational flexibility and system reliability, and the statewide benefits of more efficient and stable energy consumption. The proposed project would not result in increased Delta diversions or increased deliveries to State Water Project contractors, nor would it appreciably affect the timing of these deliveries.

The primary objectives of the proposed project are summarized as follows:

- Provide additional operational storage for the Valley String Pumping Plants;
- Provide State Water Project operators additional operational flexibility for the Valley String Pumping Plants, while avoiding increased operational complexity; and
- Reduce expensive pumping at the Valley String Pumping Plants during on-peak periods.

2.3 Project Location and Site Characteristics

The proposed Tehachapi East Afterbay site is located in southern Kern County, just north of the Los Angeles County border, approximately ten miles east of Interstate 5, nine miles east of the unincorporated town of Gorman, and 3.5 miles north of State Route 138. Most of the proposed project site would be located on land currently owned by the Tejon Ranch Company, which would be purchased by the CDWR for the project. The total acreage of land to be purchased for the proposed Tehachapi East Afterbay Project would be approximately 500 acres. This would include approximately 71 acres for the reservoir, 26.5 acres for the inlet/outlet structures, six acres for the bypass system, 75 acres for the spoil pile, up to 17 acres for the supplemental spoil area (see Section 2.4 - Project Details), as well as additional acreage for construction laydown and operations to be located between the CDWR facilities and surrounding Tejon Ranch property, which is planned for future development. As part of the 500 acres, the CDWR would purchase 239 acres of

land, as shown in Figure 2-2, to offset the permanent commitment of land that would be occupied by the proposed East Afterbay and associated improvements. A Negative Declaration was prepared by the CDWR in September 2004 for the land acquisition as requested by Tejon Ranch (seller). In addition to Tejon Ranch property, the project site would also be located on land currently owned by the CDWR.

Existing Land Uses

The proposed project would be located in an unincorporated portion of Kern County, within the boundaries of Tejon Ranch. The area has traditionally been used for ranching, grazing, and resource extraction. Items related to farming/ranching activities are located in the area, including abandoned pipes, barbed wire, steel drums, and garbage dispersed along the edges of the existing drainage channel located to the west of the proposed reservoir. Agricultural uses, including crop cultivation and grazing, dominate the area surrounding the proposed project site.

Surrounding Land Uses

A ranch house and accessory structures are located in the vicinity of the proposed project site (approximately 4,000 feet to the southwest on Pumping Plant Road). A cement plant operated by National Cement Company is located approximately three miles west of the proposed project site. An active quarry site operated B & B Materials, Inc., under a lease from the Tejon Ranch Company for the production of sand, rock, and gravel is located approximately one mile north-northwest of the project site in Little Sycamore Canyon. The California Aqueduct is located immediately southwest and south of the proposed project site. Nearby Aqueduct facilities include the Oso Pumping Plant, Oso Siphon, South Portal No. 4, Cottonwood Chutes, and Alamo Powerplant (see Figure 2-2).

General Plan and Zoning

According to the Kern County Planning Department (Kern County 2003a), the area immediately surrounding the proposed project site, including the proposed and supplemental spoil areas, has a zoning designation of Exclusive Agriculture (A). As a CDWR water storage project, the proposed project is exempt from all local building and zoning ordinances per California Government Code Section 53091 (d) and (e), respectively.

The Kern County General Plan designates the private property encompassed by the proposed project site, including the proposed and supplemental spoil areas (APN: 255-050-06 and 255-050-07) (Kern County 2004a) as Extensive Agriculture (Kern County 2004b). Those portions of the proposed project site owned by the State are designated within the Kern County General Plan as State and Federal Lands.

The proposed project is currently under a Williamson Act contract. Under the Williamson Act contract, land may be acquired for public improvements. In addition, portions of the proposed project footprint would lie within a Federal Energy Regulatory Commission (FERC) jurisdictional boundary. Authorization to encroach on FERC Project No. 2426 boundaries would be required. The CDWR will seek FERC approval to use jurisdictional land for the East Afterbay.

2.4 Project Description

The CDWR proposes to construct a reservoir and associated appurtenant structures east of the bifurcation of the East Branch and West Branch of the California Aqueduct. The proposed project would provide additional storage to the existing Tehachapi Afterbay. As a result of the proposed project, flow to the West Branch would remain relatively unchanged. Flow to the East Branch, which currently is routed through the existing Tehachapi Afterbay to Cottonwood Chutes or Alamo Powerplant, would diverge from the existing Tehachapi Afterbay into the new East Afterbay and then discharge into the Alamo headworks and/or Cottonwood Chutes, or through the new bypass that would discharge immediately downstream of Cottonwood Chutes.

Project Details

The principal features of the proposed project include: (1) inlet channel; (2) isolation weir; (3) reservoir; (4) flow barrier; (5) spoil piles; (6) outlet channel; (7) bypass; (8) existing canal improvements; (9) drainage culvert; (10) control building; and (11) site work (see Figure 2-3). These features are each described below.

Inlet Channel

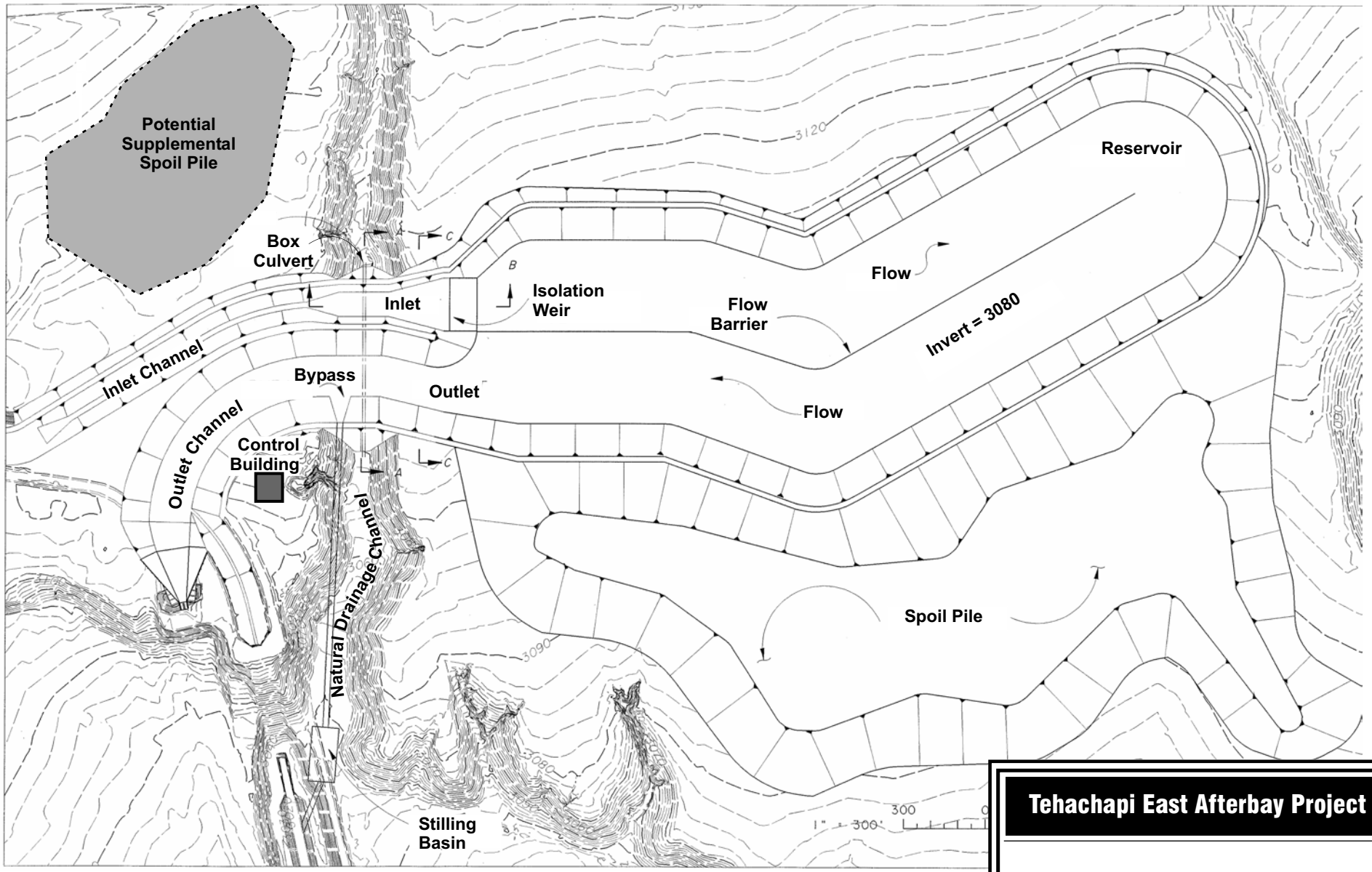
Beginning upstream, the inlet channel would consist of an inlet weir, a trapezoidal channel, a drainage crossing, and a transition to the isolation weir. The inlet channel would have a length of approximately 1,730 feet and a maximum flow capacity of approximately 3,150 cubic feet per second (cfs). Inlet flows would discharge over an inlet weir, which would consist of a concrete broad-crested weir with a maximum elevation of 3,094 feet (see Figure 2-4). The inlet weir would provide adequate flow for the inlet channel and reduce excavation required to tie into the existing canal, thereby limiting outage requirements during construction. The inlet weir would discharge into a 1,000-foot long trapezoidal channel section with an invert elevation of 3,080 feet, an invert width of 20 feet, and side slopes of 2:1. In the next 200-foot reach, the channel would transition into a widened drainage crossing with invert width of 90 feet, an invert elevation of 3,090 feet, and side slopes of 2:1. The last 300-foot section of the inlet canal would transition to the isolation weir. All channel sections would be lined with concrete. The construction contractor would determine the source of concrete, which may include importing concrete from Lancaster, or using an on-site mobile concrete batch plant.

Isolation Weir

The inlet structure would be isolated from the normal elevations of Pool 42 by an isolation weir, which would have a crest elevation of 3,097 feet (the lower elevation limit of active storage in Pool 42), thereby protecting the existing canal (Pool 42) from the rapid fluctuations of the East afterbay. The isolation weir would have a length of 195 feet and a design capacity of 3,150 cfs at elevation 3,100 feet. The concrete ogee weir would discharge into a plunge pool with an invert elevation set below the reservoir invert elevation of 3,080 feet. The length of canal reach for the isolation weir and plunge pool would be approximately 156 feet.

Reservoir

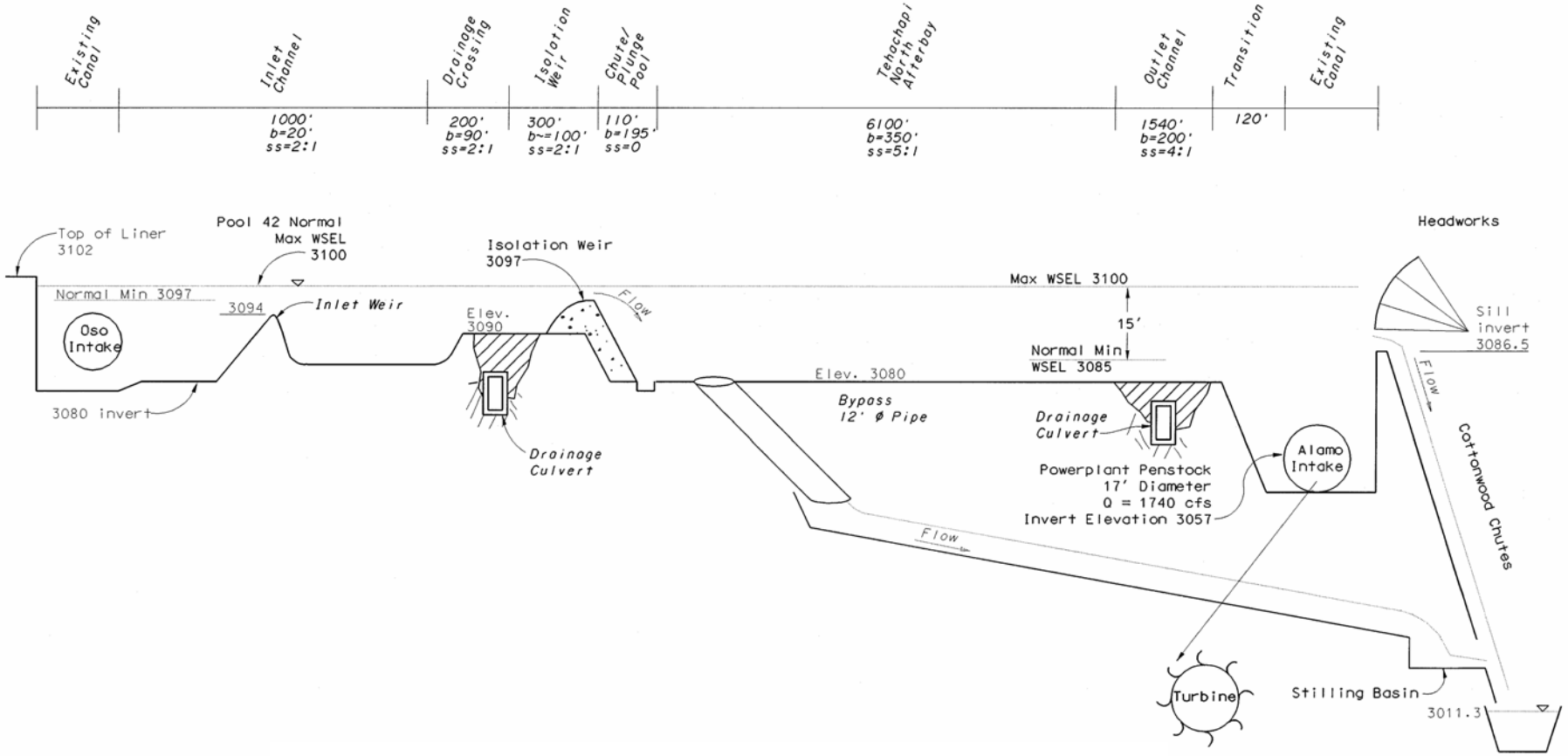
The water surface area of the Tehachapi East Afterbay would cover approximately 71 acres at the normal maximum water surface elevation of 3,100 feet (60 acres from the reservoir east of the drainage and 11 acres



Tehachapi East Afterbay Project

Figure 2-3

Proposed Tehachapi East Afterbay (Details)



Tehachapi East Afterbay Project

Figure 2-4

Schematic Profile of Tehachapi East Afterbay

Source: CDWR Division of Engineering

from the outlet channel). The gross storage capacity would be approximately 1,159 acre-feet (AF) (see Figure 2-4). The water surface elevation within the reservoir would fluctuate between 3,100 and 3,085 feet, providing an operating (active) storage capacity of 910 AF. The minimum pool elevation (3,085 feet) would create five feet (equivalent to approximately 249 AF) of inactive storage above the reservoir invert (elevation 3,080) to provide for sediment storage and to address water quality concerns. The upper three feet of the reservoir (between elevations 3,100 and 3,097 feet) would float on the existing Pool 42 (normal minimum elevation of 3,097 feet). Pool 42, upstream of the isolation weir, would provide 116 AF of storage between elevations 3,097 and 3,100. Combining the storage from Pool 42 with the active storage in the reservoir would increase the capacity available to the East Branch to 1,026 AF. In addition, the 116 AF in Pool 42 plus the top three feet of storage in the reservoir (from water surface elevation 3,100 to 3,097) would also be available to the West Branch. The top three feet of storage in the reservoir would be approximately 200 AF. Therefore, of the 1,026 AF of storage in Pool 42 and the proposed reservoir, approximately 316 AF would be available to the West Branch.

Virtually the entire reservoir pool would be constructed in excavation. Based on soil sampling completed in the proposed project area, foundation material would be composed of dense Quaternary Terrace deposits. An approximate five-foot embankment would be placed around the southern perimeter of the reservoir and contiguous with the spoil pile embankment, to reduce excavation volumes. Approximately 3.2 million cubic yards (CY) of material excavated (cut) from the reservoir site would form the spoil pile, supplemental spoil pile (if required), and embankment. The invert of the reservoir would be lined with hydraulic asphalt concrete to reduce seepage losses. Side slopes of 4:1 would be lined with a combination of compacted in-situ or locally borrowed soils and overlain with hydraulic asphalt concrete.

Flow Barrier

A flow barrier would be placed down the center of the reservoir to promote circulation of reservoir water. Materials under consideration for the construction of this structure include soil embankment, sheet piles, and pre-cast concrete panels.

Spoil Piles

Spoil materials would be permanently placed immediately south (downhill) and east of the reservoir site (see Figure 2-3). A supplemental spoil pile located west of the existing drainage channel may also be utilized during construction. The embankment of the spoil pile would have a maximum height of approximately 35 feet (crest elevation of 3,135 feet) with varying slopes (generally 4:1). Benching and drainage of the spoil pile may be required. The supplemental spoil pile would be contoured similarly.

Outlet Channel

The 1,630-foot long outlet channel would convey reservoir storage over the existing drainage channel and discharge into the Alamo headworks and/or Cottonwood Chutes. The outlet channel crossing the drainage would be lined with concrete, and have an invert width of 150 feet, an invert elevation of 3,080 feet, and side slopes of 4:1. The width of the canal would widen near the existing canal connection to improve hydraulics. The capacity of the outlet channel would be 3,150 cfs.

Bypass

A bypass structure would be constructed to provide East Branch deliveries during remediation of the existing canal (Pool 42), and to provide a permanent bypass around Alamo Powerplant and Cottonwood Chutes. The bypass would have a capacity of 3,150 cfs, and consist of a 30-foot-wide concrete turnout structure located in the outlet channel, a buried 12-foot by 12-foot double-box concrete culvert, and a 35-foot by 150-foot stilling basin that discharges immediately downstream of Cottonwood Chutes. The total length of the bypass facility would be approximately 1,500 feet. Two 12-foot by 8-foot slide gates would control discharge into the turnout structure. The existing drainage channel would be returned to original condition throughout most of the length of the bypass. To safely convey natural flows along the southern end of the bypass, improvements would be constructed near the new stilling basin and would include grading and installation of erosion protection (rock slope protection) along the west side of the channel, similar to what currently exists at that location.

Existing Canal Improvements

The existing canal immediately upstream of Cottonwood Chutes and Alamo Powerplant headworks would require modification to withstand the new drawdown requirements imposed by reservoir operation. Therefore, this work would include excavation and backfilling in the existing canal (Pool 42) prism between the inlet and outlet channels.

Drainage Culvert

A 7-foot by 7-foot concrete box culvert at 644 feet in length would convey the local drainage beneath the inlet and outlet channels. Hydrology studies prepared by the CDWR disclose that the 465-acre drainage area would produce an estimated 400 cfs discharge for a 100-year return interval. Therefore, the culvert is oversized to allow cleaning using small loaders and can pass up to the Probable Maximum Flood (PMF) flow of 1,300 cfs.

Control Building

A single-story control building measuring approximately 15 feet by 25 feet would be provided to contain controls for the bypass slide gate, backup generators, System Control and Data Acquisition (SCADA), heating, ventilation, air conditioning, and other related equipment. A 750-gallon liquid petroleum gas (LPG) tank for the emergency generator would be located a minimum of 25 feet from the wall of the building. The concrete foundation for the building is approximately 37 feet by 19 feet. This structure would be located near the headworks of Alamo penstock as shown in Figure 2-3.

Site Work

Site work would include construction of access roads, local drainage improvements, revegetation, erosion protection, installation of utilities and general security measures. Paved access roads would be constructed round the proposed reservoir from the isolation weir to the outlet channel (6,950 feet), around the inlet channel from the inlet weir to the isolation weir (1,800 feet), around the outlet channel from the proposed reservoir to headworks (1,000 feet), and on the east and west side of the improved headworks area (750 feet) (CDWR 2004g). A new gravel maintenance road would be constructed from the bypass stilling basin to the culvert outlet (2,500 feet). Gravel maintenance roads would also be improved in the proposed project area (approximately 25,000 feet with 20-foot width) (CDWR 2004g) to support construction and maintenance activities. Existing paved, gravel, and dirt roadways would also be utilized during construction.

Local drainage improvements within the proposed project site would include providing a concrete culvert within the existing drainage channel with approximately 100 feet of rock slope protection to avoid erosion and undercutting of the culvert, as well as various areas along the existing sloping face south of the proposed project area (see Figure 2-5). Materials for erosion protection (and the temporary cofferdam) may come from as nearby as the quarry operated by B & B Materials, Inc., located approximately a mile north-northwest of the proposed project site. It should be noted that the existing drainage channel would be largely unaffected by the construction of the bypass culvert structure (CDWR 2004g).

Within the proposed project site, revegetation would be completed at the spoil pile (and supplemental spoil pile if used), cut slopes north of the reservoir maintenance (paved) road, the two construction laydown areas, and temporary access roads (see Figure 2-5). Erosion protection, including rock slope protection and filter fabric, grading, and revegetation would occur for all disturbed ground within the proposed project area. Perimeter fencing would be installed around the reservoir and inlet/outlet structures and would tie into the existing fence at Check 42. Fencing would also be installed around the stilling basin. Signs, as well as area lighting near the control building, would also be installed.

Utilities to be relocated as a result of the proposed project include several poles and lines northeast of Check 42 (headworks) owned by Southern California Edison, and a fiber optic cable (FOC) owned by MCI. The poles and lines would be rerouted to the southwest of Check 42. The FOC, which comes from the Oso Pumping Plant, across the Oso Siphon, then branches north to the Tehachapi Control Structure at the Porter Tunnel south portal, and south along the Aqueduct embankment to Alamo Penstock and Cottonwood Chutes, would be rerouted prior to modifications of Alamo Headworks construction. A new power service line may also be installed, which would connect to the new control building.

Project Construction Details

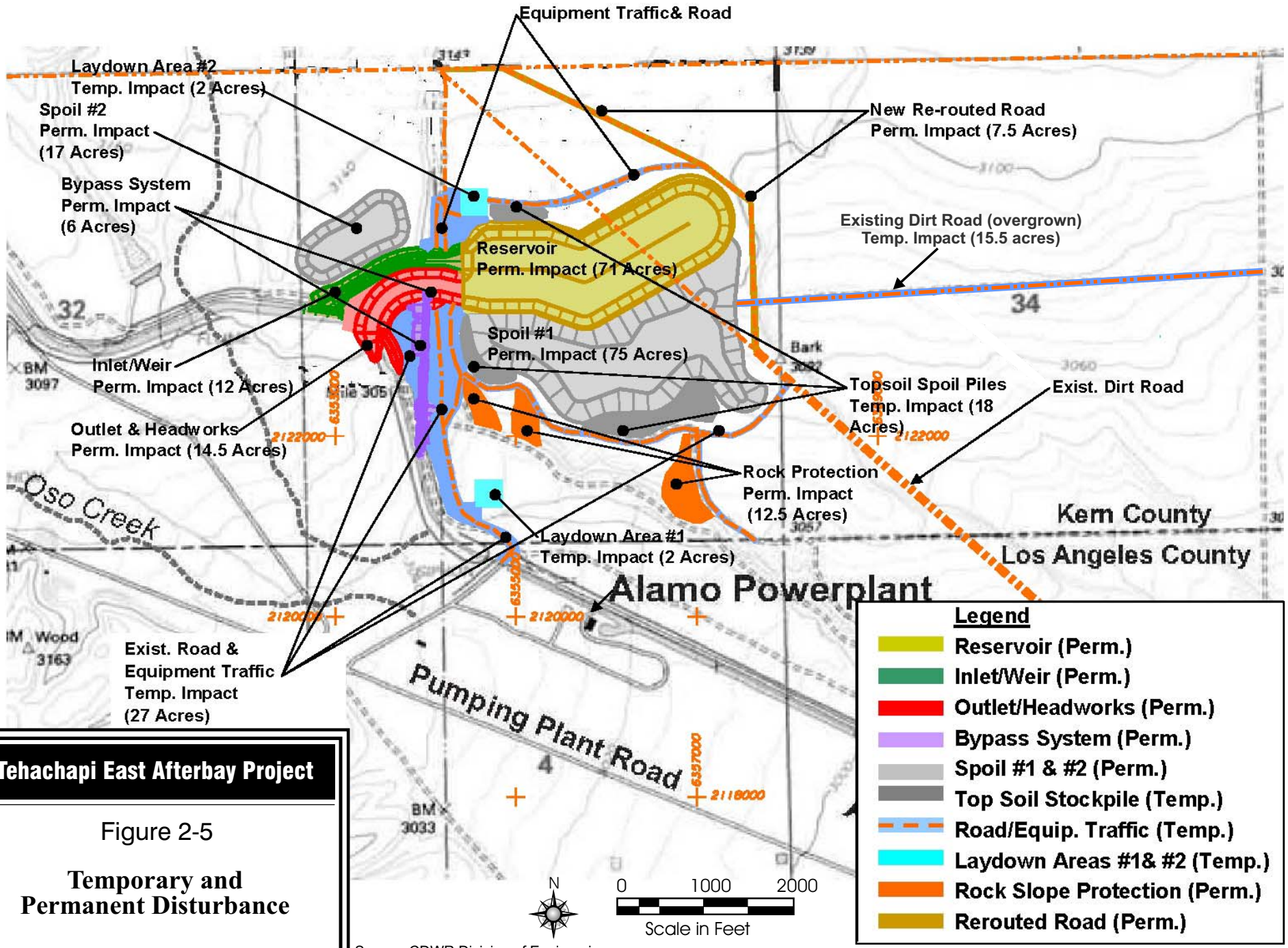
Construction of the Tehachapi East Afterbay is expected to occur over a 17-month period, and is tentatively scheduled for February 2005 to June 2006. An average of 65 workers would be required during construction with a peak on-site crew of approximately 100 workers, which would be anticipated to occur between July 2005 and January 2006 when both the reservoir contractor and the Headworks/Structures contractor would be working at the proposed project site (CDWR 2004i). Workers would generally commute from the Bakersfield, Los Angeles, Lancaster, or Frazier Park areas, with an assumed average commute of 70 miles each way (140 miles roundtrip) (CDWR 2004h). The length of a typical construction workday would be eight hours per day, five days per week, although during reservoir excavation activities, one shift of ten hours per day, six days per week is anticipated. During critical periods of construction, such as outage periods, two 12-hour shifts may also be utilized (CDWR 2004i). A total of 10,029 haul truck trips are estimated to occur during construction, as discussed in Section 3.1, with commute distances as short as 30 miles (Lancaster) and as far as 200 miles (Port of Los Angeles). The estimate of haul truck trips assumes that concrete would be imported to the project site, whereas the construction contractor may elect to use an on-site mobile concrete batch plant and screening plant, which would substantially reduce the number of truck trips required during construction.

Construction of the proposed project would permanently occupy approximately 198.5 acres (up to 215.5 acres including the supplemental spoil area) and temporarily disturb approximately 64.5 acres within the proposed project area (CDWR 2004k), as shown in Figure 2-5. Temporary disturbance would include the construction

laydown or staging areas, which would include the contractor's office, parking, laydown areas, and soils laboratory building; topsoil spoil piles; and roadways subject to construction traffic. Land area permanently devoted to the proposed project would include the reservoir footprint (approximately 71 acres); inlet/outlet and headworks structures, including the box culvert (approximately 26.5 acres); bypass structure (approximately 6 acres, which includes 40 feet on either side of the bypass structure for excavation, compaction, and fortification of the area around the bypass culvert structure); spoil pile and embankment (approximately 75 acres), and drainage improvement areas (approximately 12.5 acres). If the supplemental spoil area were to be used, approximately 17 additional acres would be permanently disturbed for a total of 215.5 acres. The CDWR proposes to purchase 239 acres of land to offset the permanent commitment of land for the proposed East Afterbay and associated improvements, as shown in Figure 2-2.

Construction of the proposed project would occur in several phases (CDWR 2004j). During the first phase of construction (Phase 1A – Reservoir Construction) the reservoir would be constructed, which would include installation of the box culvert and placement of fill at the drainage channel; excavation of the reservoir, inlet, and outlet channels; construction of the reservoir liner, flow barrier, temporary cofferdam, inlet and outlet channel liner, isolation weir, bypass structure, conveyance, and stilling basin. During Phase 1A, regular East Branch and West Branch operations would be maintained (Elevation 3,100 feet maximum). The next phase of construction (Phase 1B – Operation Outage at West Branch) would include excavation of the inlet channel to the existing Pool 42 lining, demolition of a portion of the Pool 42 lining, and placement of compacted soil lining and concrete canal lining. During Phase 1B, East Branch operation would occur at a maximum elevation of 3,092 feet, and a two-week outage of the West Branch would occur at Oso Pumping Plant. The third phase of construction (Phase 1C – Operational Outage at Cottonwood Chute) would include excavation of the channel from the new stilling basin to Cottonwood Canal, demolition of a portion of the existing Cottonwood canal lining, and placement of concrete canal lining. During this phase, the East Branch would be operational through Alamo Powerplant; however, there would be a two-week outage at Cottonwood Chutes. West Branch operations would continue at an elevation of 3,097 feet.

The fourth phase of construction (Phase 2A – Interim TEA Operation During Alamo Powerplant Outage) would include construction of a diversion plug in Pool 42 to reroute water into the inlet channel of the new reservoir, demolition of a portion of the existing Pool 42 lining, excavation of the outlet channel (downstream of the temporary cofferdam) to connect to the existing Alamo Headworks, installation of concrete canal lining, and modifications to Headworks. During this phase, the East Branch would operate at a maximum elevation of 3,100 feet and would pass through the new Tehachapi East Afterbay and flow into the new bypass to Cottonwood Canal. East Branch deliveries through Alamo Powerplant, however, would not occur for approximately five months (outage period). Regular West Branch operations would occur during Phase 2A. The last phase of construction (Phase 2B – Operational Outage to Remove Temporary Cofferdam) would include removal of the temporary cofferdam. During this final phase, the East Branch, including the new TEA reservoir, Alamo Powerplant, and Cottonwood Canal, would be non-operational for approximately two weeks. West Branch operations would continue at a maximum elevation of 3,097 feet.



Tehachapi East Afterbay Project

Figure 2-5

Temporary and Permanent Disturbance

Source: CDWR Division of Engineering

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Construction equipment would include scrapers, graders, bulldozers, compactors, loaders, excavators, asphalt paving equipment, cranes, concrete pump trucks, dump trucks, and water trucks. Small quantities of hazardous materials (e.g., gasoline, oils, lubricants, and solvents) would be stored, used, and handled during construction for the operation of the construction equipment.

During construction, the contractor would be allowed to obtain water from the California Aqueduct for construction purposes (CDWR 2003c). Potable water would not be required for construction purposes. Large portable lights (a.k.a. light plants) may be used during nighttime construction, although the construction contractor would determine actual construction lighting.

Project Operation and Maintenance (O&M)

The Tehachapi East Afterbay would serve as both a storage and conveyance facility between Pool 42 and Alamo Powerplant and Cottonwood Chutes. The isolation weir would have a crest elevation of 3,097 feet, which is three feet below the maximum operational elevation for both Pool 42 and the East Afterbay. When inflow into the East Afterbay is desired, the level of Pool 42 would be raised to flow over the isolation weir. The level of Pool 42 would stabilize when the inflow into the East Afterbay is equivalent to the inflow into Pool 42, minus the outflow to the West Branch. The isolation weir makes the operation of the East Afterbay simple, in the respect that any Edmonston pumped volume that is not pumped to the West Branch would flow over the isolation weir into the East Afterbay. Since the isolation weir elevation is below the maximum operational elevation (3,100 feet), there would be a common pool between the East Afterbay and Pool 42. Therefore, if the East Afterbay level is above the isolation weir elevation, the East Afterbay and Pool 42 levels would increase as one pool.

Outflow from the Tehachapi East Afterbay would be from three facilities: the existing Alamo Penstock, the existing Check 42, and the bypass structure. The design flow of each of these structures exceeds the design flow to the East Branch to provide additional system flexibility and compensate for operational limitations to the two existing structures (Alamo Penstock and Check 42) due to the change in the expanded operation range of the East Afterbay. For example, the bottom of the radial gates at Check 42 is at elevation 3,086 feet, whereas the normal minimum elevation in the East Afterbay is 3,085 feet. Therefore, as the East Afterbay is drawn down the flow from the gates would substantially decrease. For this reason, the bypass structure would be used to supplement the outflow.

Overall, operation of the proposed reservoir would be similar to operating a wide spot in Pool 42. The proposed project would require no permanent on-site operational personnel. Operational activities associated with the proposed project would include routine daily surveillance of the area by water operations personnel from the CDWR's Southern Field Division.

Maintenance would include both regular civil maintenance and preventative maintenance. Regular civil maintenance would include: grading access roads; repairing asphalt sections, as needed; cleaning and maintaining all drainage ditches; implementing erosion control practices in the immediate area, as needed; applying herbicides and pesticides, as needed, to adjacent land and to the water in the proposed reservoir; removing aquatic growth and wind blown debris; performing coating work on gates and other structures; and maintaining signs, fencing gates, protective devices, etc. A preventative maintenance schedule (annual, semi-

annual) would be set up for the mechanical and electrical equipment. The reservoir would be cleaned of silt approximately every five to ten years according to an established protocol consistent with other similar CDWR facilities. To remove sediments, the reservoir must be drained. Typically, the CDWR advises the CDFG prior to sediment removal in the event that there are concerns about relocating fish. Silt would be removed with small rubber-tired loaders and dump trucks and deposited on top of the spoil pile and/or supplemental spoil pile. The disturbed area would be revegetated to prevent erosion.

2.5 Environmental Commitments

As part of the proposed project, the following environmental commitments and best management practices (BMPs) have been agreed to by the CDWR and have been incorporated into the project design.

- The Construction Project Manager shall monitor all site preparation and excavation activities for evidence of archaeological or paleontological resources that may be unearthed. In the event that a potential archaeological or paleontological resource is discovered, construction activities within 250 feet of the find shall be immediately halted. The Construction Project Manager shall contact a qualified archaeologist or paleontologist to investigate the potential resource and make a determination of significance. If the resource appears to represent a significant find, activities at that location will be halted until further evaluation of the resource can be completed (in accordance with Public Resources Code §21083.2 and State CEQA Guidelines §15064.5(f)) and, if necessary, appropriate action has been taken.
- The Construction Project Manager shall monitor all site preparation and excavation activities for evidence of buried human remains. In the event that human remains or possible human remains are discovered, construction activities within 250 feet of the find shall be immediately halted. The Construction Project Manager shall immediately notify a Cultural Resources Specialist, who in turn shall immediately notify the county coroner for the appropriate county, in compliance with California Health and Safety Code §7050.5 and State CEQA Guidelines §15064.5(e). Construction may recommence once compliance with all relevant sections of the California Health and Safety Code has been completed, the Cultural Resources Specialist has completed all necessary investigations, and a written authorization to proceed has been issued by the CDWR.
- The construction contractor shall develop and submit detailed plans for implementing the permits obtained by the CDWR. These plans shall be submitted to the appropriate agencies (e.g., Kern County Air Pollution Control District, Lahontan Regional Water Quality Control Board, Kern County Fire Department, California Department of Transportation, etc.) for review and approval. The plans shall include but not be limited to the following: (1) Air Quality Control Plan, (2) Water Quality Control Plan, (3) Fire Prevention and Control Plan, (4) Storm Water Pollution Prevention Plan (SWPPP), and (5) Traffic/Noise Abatement Plan. Copies of the above plans shall be maintained at the work site throughout the construction period.
- The construction contractor shall prepare a SWPPP in accordance with the Regional Water Quality Control Board (RWQCB) guidelines. This plan shall include provisions for water quality protection and for implementing BMPs chosen to mitigate for construction activity pollutants.
- Project design and construction practices to be implemented by the CDWR and/or its construction contractor shall minimize soil erosion during construction and operation of the proposed facilities. Implementing recommendations from the California Stormwater Best Management Practices Handbook would minimize soil erosion. Erosion-minimizing efforts may include measures such as avoiding excessive disturbance of steep slopes; using drainage control structures (e.g., coir rolls or silt fences) to direct surface runoff away from disturbed areas and/or trapped sediments; strictly controlling vehicular traffic; implementing a dust-control program during construction; using vehicle mats in wet areas; and revegetating or reseeding disturbed areas following construction. Erosion-control measures shall be installed before extensive clearing and grading begins, and before the onset of winter rains.
- The CDWR shall plant native vegetation appropriate to the project site in areas disturbed by project construction, including staging areas and spoil areas.

- The CDWR shall establish an environmental training program to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper BMP implementation, to all construction personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances) and shall include a review of all site-specific plans. A monitoring program shall also be implemented to ensure that the plans are followed throughout the period of construction.
- The construction contractor shall prepare a Hazardous Substance Control and Emergency Response Plan that would include preparations for quick and safe cleanup of accidental spills. This plan shall prescribe hazardous-materials handling procedures to reduce the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. The plan shall identify areas where refueling and vehicle-maintenance activities and storage of hazardous materials, if any, would be permitted. The directions and requirements shall be reiterated in the project's SWPPP.
- The CDWR or its construction contractor shall use oil-absorbent material, tarps, and storage drums to contain and control minor releases. Emergency-spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the project's Hazardous Substances Control and Emergency Response Plan.
- The CDWR or its construction contractor shall store fuel, oil, and other hazardous materials only at designated sites. Quantities of all hazardous materials stored on-site shall be avoided or minimized, and substitution of non-hazardous materials for hazardous materials shall be implemented to the extent practicable. Each hazardous material container shall be clearly labeled with its identity, handling and safety instructions, and emergency contact. Similar information shall be clearly available and visible in the storage areas. Storage and transfer of such materials shall not be allowed within 100 feet of waters of the State. Storage or use of hazardous materials in or near wet or dry streams shall be consistent with the Fish and Game Code and other State laws. Material Safety Data Sheets (MSDS) shall be made readily available to personnel at the work site. The accumulation and temporary storage of hazardous wastes shall not exceed 90 days. Soils contaminated by spills or cleaning wastes shall be contained and shall be removed to an approved disposal site. Disposal of hazardous wastes shall be in compliance with the applicable laws and regulations.
- During all project excavation activities, the CDWR or its construction contractor shall inspect exposed soil for visual evidence of contamination. If visual contamination indicators are observed (e.g., soil discoloration) during excavation or grading activities, all work in the immediate area shall stop and appropriate sampling and testing shall be performed to verify the presence and extent of contamination at the site. The sampling and testing shall be conducted by personnel who meet the federal Occupational Safety and Health Administration requirements for employee training (29CFR1910.120). If testing results indicate the presence of hazardous substances, the CDWR shall contact the Kern County Environmental Health Services Department or the California Department of Toxic Substance Control before proceeding with further earth movement or construction activities in the affected area. Areas with contaminated soil determined to be hazardous waste shall be removed by trained personnel following an approved plan for soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment.
- During construction and operation of the proposed project, project personnel shall follow all applicable rules and regulations governing the storage, transportation, use, handling, and disposal of hazardous materials.
- The CDWR or its construction contractor shall maintain construction equipment to minimize hazardous material spills. Stationary power equipment, such as engines, pumps, generators, welders, and air compressors, shall be positioned over drip pans. Equipment used in water shall be free of exterior petroleum products (or other hazardous materials) prior to submersion and shall be checked and maintained daily to keep the equipment exteriors clean.
- The CDWR or its construction contractor shall store hazardous materials in containers with secondary containment.
- The construction contractor shall prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan in accordance with federal and California regulations. This plan must be prepared if petroleum products are stored in

aboveground storage tanks with a capacity that equals or exceeds 660 gallons for a single tank, or equals or exceeds 1,320 gallons for more than one tank. The SPCC Plan must be prepared prior to delivery of petroleum products to the project site. The SPCC Plan shall include information on spill response procedures and fuel storage.

- In case of a spill or accident involving hazardous materials, the CDWR or its construction contractor shall immediately notify the Kern County Fire Department. All other federal, state, and local notification requirements shall be followed for any release that exceeds the reportable quantity or threatens to have a significant impact.
- The CDWR or its construction contractor shall protect tanks with vehicle barriers temporarily placed on-site for refueling from potential traffic accidents.
- For the transportation of hazardous materials, the CDWR or its contractors shall comply with all applicable regulations of the U.S. Department of Transportation, U.S. Environmental Protection Agency (USEPA), California Department of Toxic Substances Control, California Highway Patrol, and California State Marshal.
- The CDWR or its construction contractor shall be responsible for maintaining appropriate fire suppression equipment at the work site. Fire extinguishers, shovels and other firefighting equipment shall be inventoried and available at work sites and on construction equipment. Each vehicle on the right-of-way shall be equipped with a minimum 20-pound (or two 10-pound) fire extinguisher(s) and a minimum of five gallons of water in a firefighting apparatus (e.g., bladder bag).
- At the work site, sealed fire toolboxes shall be located at various points throughout the work site accessible in the event of fire. The location of the fire toolboxes shall be determined by the CDWR or its construction contractor to maintain safety in all areas of the work site. The fire toolboxes shall contain at a minimum: one backpack pump-type extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels so that employees at the work site can be equipped to fight fire.
- The construction contractor shall equip gasoline-powered construction equipment with catalytic converters with shielding or other acceptable fire prevention features.
- The construction contractor shall equip internal combustion engines with spark arrestors. Welding sites shall include fire prevention provisions.
- The CDWR or its construction contractor, as desired by the utility owner(s), shall restore during or after construction all utilities disrupted by the construction of the Tehachapi East Afterbay.
- The CDWR or its construction contractor shall remove all exposed abandoned utility conduits to a distance of at least 50 feet from the reservoir embankment.
- The construction contractor shall use diesel engines certified to meet the USEPA and/or the California Air Resources Board (CARB) Tier 1 or better off-road equipment emissions standards, to the extent feasible. Equipment shall be verified by the CDWR.
- The CDWR shall notify the California Department of Fish and Game (CDFG) two weeks prior to draining the Tehachapi East Afterbay so that CDFG may have the opportunity to communicate to CDWR any interests regarding fish populations in the reservoir.

2.6 Intended Uses of the EIR and Other Public Agency Actions

This Draft EIR is intended to provide environmental review for the proposed project pursuant to the requirements of CEQA. The Final EIR must be certified by the CDWR as to its adequacy in complying with the requirements of CEQA before any action is taken to approve the proposed project. The CDWR must consider the information contained in the Final EIR in making a decision to approve the proposed project. In addition to CDWR's approval, the proposed project would be subject to the agency permits and approvals listed in Table 2-1. The Final EIR is intended to provide CEQA review for all required permit and approvals needed to construct, operate, and maintain the proposed project.

Table 2-1. Required Permits and Approvals

Agency	Permit/Approval Needed
California Department of Fish and Game (CDFG)	Notification for Streambed Alteration (may result in a determination that a Section 1602 Streambed Alteration Agreement is needed)
Kern County Air Pollution Control District (KCAPCD)	Authority to Construct/Permit to Operate may be required for an on-site concrete batch plant and screening plant (if required by the construction contractor), and for the emergency generator (if the manufacturer's maximum continuous rating is greater than 50 brake horsepower).
State Water Resources Control Board (SWRCB)	General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit 99-08-DWQ).
Lahontan Regional Water Quality Control Board (RWQCB)	General Waste Discharge Requirements for Small Construction Projects, Including Utility, Public Works, and Minor Streambed/Lakebed Alteration Projects (R^T-2003-0004). This permit regulates dredging and minor stream alterations within surface waters of the State when 401 Water Quality Certification is not applicable (for non-federal waters).
Federal Energy Regulatory Commission (FERC)	Approval of use of project land for non-project purpose.
California Department of Conservation	Notification of acquisition of land currently under Williamson Act contract.
Kern County	Notification of acquisition of land currently under Williamson Act contract.

As discussed in Section 3.2, the application of aquatic pesticides is carried out under the conditions set forth in a general statewide NPDES permit that covers all State Water Project facilities. The statewide permit for aquatic pesticide application would be amended to include the Tehachapi East Afterbay. In general, the handling and use of pesticides must follow USEPA guidelines.

A 404 permit from the United States Army Corps of Engineers would not be required for the proposed project as those waterways impacted by the proposed project are considered isolated.